ST Consult
Environmental & Geotechnical

Factual Site Investigation Report

Desk Studies | Risk Assessments | Site Investigations | Geotechnical | Contamination Investigations | Remediation Design and Validation

Site: 151-157 Regents Park Road, London

Client: Uchaux Limited

Report Date: 30th July 2018

Project Reference: JN1143

AGS ace CHAS BSI ISO 9001 ISO 14001 BS18001

ST Consult, Twigden Barns, Brixworth Road, Creaton, Northamptonshire, NN6 8LU
Tel: 01604 500020 | Fax: 01604 500021 | www.stconsult.co.uk

ST Consult is a Regional Office of Southern Testing Laboratories Limited
Keeble House, Stuart Way, East Grinstead, West Sussex, RH19 4QA
Tel: 01342 333100 | Fax: 01342 410321 | www.southerntesting.co.uk

Company Registration No: 02183217 VAT No: 387 4740 28

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A INTRODUCTION

1 Authority

Our authority for carrying out this work was given by way of a completed purchase order form from Tom Harris of Grafton, courtesy of the client Uchaux Ltd, dated 29th June 2018.

2 Location

The site is located at 151-157 Regents Park Road, in Camden, London. The approximate National Grid Reference for the centre of the site is TQ 281 843.

3 Background Information

We understand that the proposals for the site comprise the demolition of the front of the building, and the construction of a multi-storey hotel and basement.

4 Object

This is a factual ground investigation report only, with no interpretation of the data.

The object of the investigation was to carry out a geotechnical investigation to confirm ground conditions. The borehole locations were specified by HTS and LBH Wembley.

5 Scope

This report presents our exploratory hole logs, geotechnical test results and monitoring data only. No interpretation is given.

A formal desk study, wider geotechnical and contamination assessment were outside the requested scope of works. Soil waste characterisation did not form part of our brief for this investigation.

As with any site there may be differences in soil conditions between exploratory hole positions.

This factual ground investigation report is not an engineering design and the figures and calculations contained within should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

The site investigation was conducted and this report has been prepared for the sole internal use and reliance of Uchaux Ltd and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorization of Southern Testing Laboratories Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

J. Kelly PhD	C. Ward BSc FGS
(Countersigned)	(Signed)

For and on behalf of Southern Testing Laboratories Limited

B SETTING

6 The Site

The site forms part of a multi-use (residential, offices, restaurants) U-shaped building, with internal courtyard for parking. It is located on Regents Road, in north-west London. The proposed cable percussion borehole is within the courtyard area, whilst the trial pit is located within one of the restaurant basements. The site itself is generally flat.

7 Geology

The British Geological Survey Map indicates that the site geology consists of the London Clay Formation.

London Clay is a well-known stiff (high strength) blue-grey, fissured clay, which weathers to a brown colour near the surface. It contains thin layers of nodular calcareous mudstone - "claystone" - from place to place, and crystals of water clear calcium sulphate (selenite) are common.

C GROUND INVESTIGATION

8 Investigation Method

The fieldwork was undertaken during the period 11th July to 12th July 2018. In general accordance with the original enquiry, and discussions with HTS and LBH Wembley onsite, the strategy for the work comprised the following:-

- 1 No. cable percussion borehole to a depth of 30m.
- The cable percussion borehole was started with a 1.2m deep hand-dug services inspection pit, after which alternate SPT and UT100 sampling was undertaken, at 1.0m centres to a depth of 5m; thereafter, these were undertaken at 1.5m centres.
- Both small disturbed and bulk disturbed samples were also taken from the boreholes, at regular depths.
- 1No hand-dug foundation inspection pit was excavated within the existing basement
- Geotechnical testing has been scheduled on a limited number of samples; the remaining samples will be retained for a period of 1 month following issue of this report.

D ENCOUNTERED GROUND CONDITIONS

The soils encountered are described in detail on the attached exploratory hole logs (Appendix B).

9 Soils as Found

The soils encountered are summarised in the table below.

Depth	Soil Type	Description
-0.1m	BLACKTOP	Blacktop
-1.2m	MADE GROUND	Dark brown sandy gravelly CLAY. Gravel consist of brick and concrete fragments
-4.8m	Silty CLAY	Firm to stiff orange-brown / grey mottled silt CLAY with occasional sand lenses
-30m+	Silty CLAY *[London Clay]*	Very stiff to hard dark grey silty CLAY, with occasional hard brown clay-stones

10 Groundwater Strikes

Groundwater was encountered within the cable percussion borehole as follows:

Borehole	Strike Depth (m)	Sealed Depth (m)	Rose to Depth(m)	Comment
BH1	4.0	4.4	3.85	Slow – around claystone

A moderate inflow of groundwater was also encountered within the hand-dug trial pit, from within the granular material directly underlying the basement slab. The trial pit filled with water approximately every 4 minutes, at which point the water was bailed out. The trial pit was kept open for a total of 20 minutes, before sealing and backfilling with rapid-set cement.

E IN-SITU FIELD TESTING

The following in-situ test and sampling methods were employed where possible. Descriptions are given in Appendix B, with the test results recorded on the trial hole logs.

- Disturbed Sampling
- Standard Penetration Tests
- Undisturbed sampling

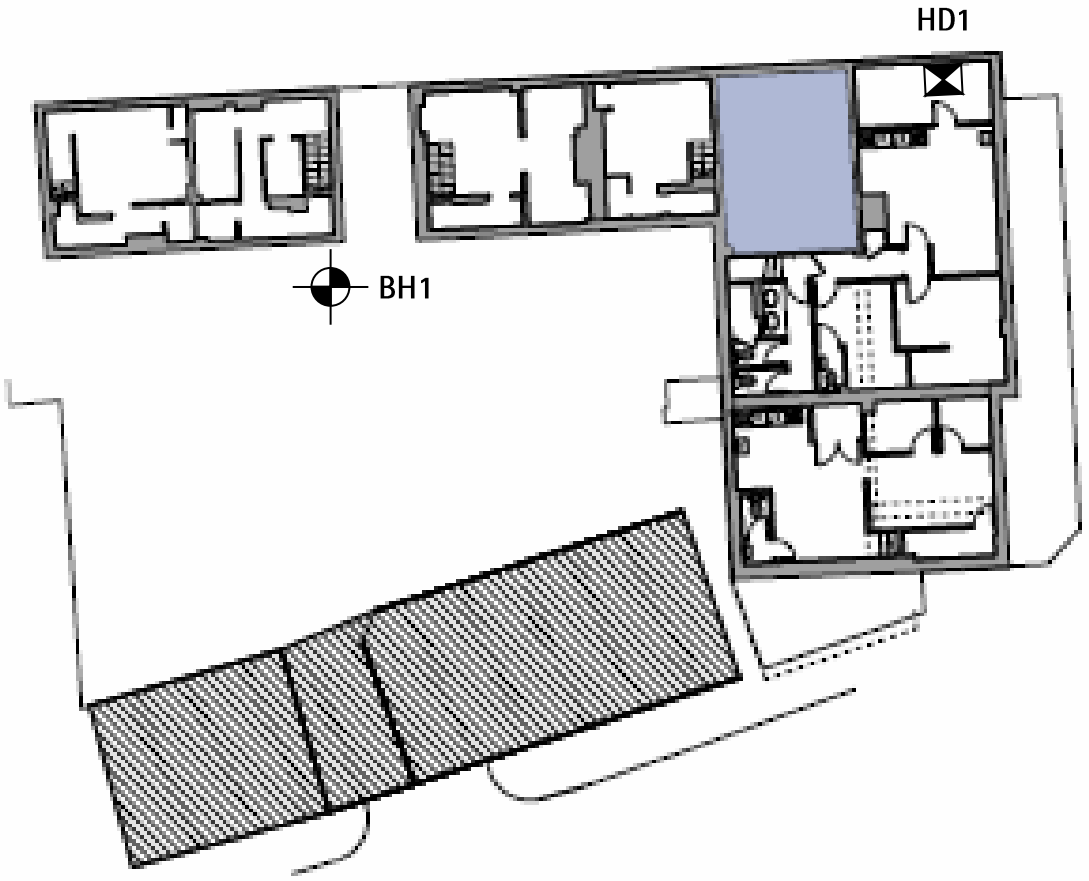
F GEOTECHNICAL LABORATORY TESTS

The following tests were carried out on selected samples, as scheduled by the clients geotechnical engineers, LBH Wembley. Test method references and results are given in Appendix C. The laboratory testing was completed by i2 Analytical Ltd, Watford Hertfordshire - UKAS testing laboratory number 4041.

- Moisture Contents and Atterberg Limits
- pH & water soluble sulphate
- Quick Undrained Triaxial

APPENDIX A

Site & Fieldwork Location Plans



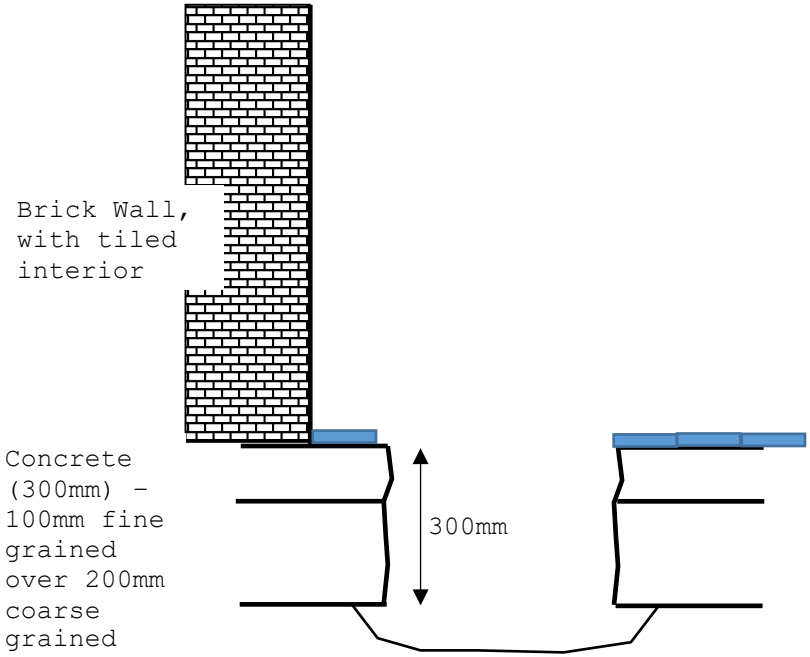
NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: 151-157 Regents Park Road, Camden, London	STL: JN1143	Fig No:
Date: 16 July 2018		

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult



10mm rebar

Groundwater prevented further exploration of existing foundations. Trial pit terminated due to substantial groundwater inflow. Trial pit was kept open for a total of 20 minutes, during which time the water reached the surface approximately every 4 minutes, the water was bailed out each time. After discussions with Structural Engineer, pit was backfilled with quick set cement.

NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: 151-157 Regents Park Road	STL: JN1143	Fig No:
Date: 20 July 2018	HD1	

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult

APPENDIX B

Engineering Logs

Southern Testing ST Consult	Start - End Date	Project ID:	Hole Type:	BH1
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	11/07/2018 - 12/07/2018	JN1143	CP	Sheet 1 of 3

Project Name:	151-157 Regents Park Road	Remarks:	Co-ordinates:	Level:	Logger:
					CW
Location:	Camden, London				
Client:	Uchaux Ltd				

Well	Water Strikes	Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
		Depth (m bgl)	Type	Results					
		0.15	D			(0.10)		0.10	Blacktop
		0.30	D						MADE GROUND comprising dark brown sandy gravelly CLAY. Gravel consists of brick and concrete fragments
		0.50	D			(1.10)			
		1.20	D					1.20	
		1.20 - 1.65	D						Firm to stiff orange-brown / grey mottled silty CLAY with occasional sand lenses
		1.20	SPT(S)	N=11 (1,1/2,2,3,4)					
		1.90	D						
		2.00 - 2.45	U						
		2.00 - 3.45	D						
		2.30	D						
		2.80	D						
		3.00	SPT(S)	N=12 (1,1/3,2,3,4)		(3.60)			
		3.70	D						
		4.00	U						CLAYSTONE
		4.00 - 4.50	B						
		4.50 - 4.95	D						
		4.50	SPT(S)	N=17 (2,2/4,3,4,6)				4.80	
		5.00	D						Stiff to very stiff dark grey silty CLAY
		5.50 - 5.95	U						
		6.00	D						
		7.00	D						
		7.00	SPT(C)	57 (7,8/57 for 225mm)		(10.20)			CLAYSTONE
		7.50 - 7.95	D						
		7.50	SPT(S)	N=25 (3,3/4,6,6,9)					
		8.50	D						CLAYSTONE
		9.00 - 9.45	U						
		9.50	D						
		10.00	D						

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks
	150			11-07-2018	4.00	1.50	4.40	3.85	20	4.00 8.50	4.40 8.70	00:30 00:30	

Southern Testing ST Consult

www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020

Start - End Date	Project ID:	Hole Type:	BH1
11/07/2018 - 12/07/2018	JN1143	CP	Sheet 2 of 3

Project Name:	151-157 Regents Park Road	Remarks:	Co-ordinates:	Level:	Logger:
					CW
Location:	Camden, London				
Client:	Uchaux Ltd				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
									Stiff to very stiff dark grey silty CLAY
		10.50 - 10.95	D						
		10.50	SPT(S)	N=27 (2,3/8,6,6,7)					
		11.50	D						
		12.00 - 12.45	U						
		12.05	D						
		13.00	D						
		13.50 - 13.95	D						
		13.50	SPT(S)	N=28 (4,4/7,6,7,8)					
		14.50	D						
		15.00 - 15.45	U					15.00	
		15.50	D						Very stiff becoming hard dark grey silty CLAY
		16.00	D						
		16.50 - 16.95	D						
		16.50	SPT(S)	N=36 (5,5/8,9,9,10)					
		17.50	D						
		18.00 - 18.45	U						
		18.40	D						
		19.00	D						
		19.50 - 19.95	D						
		19.50	SPT(S)	N=42 (7,8/8,10,11,13)					
		20.00	D						

11 12 13 14 15 16 17 18 19 20

Hole Details

Depth (m bgl)	Dia. (mm)
	150

Casing Details

Depth (m bgl)	Dia. (mm)

Waterstrike (m bgl)

Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)
11-07-2018	4.00	1.50	4.40	3.85	20

Standing/Chiselling (m bgl)

From	To	Time	Remarks
4.00	4.40	00:30	
8.50	8.70	00:30	

Southern Testing ST Consult

www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020

Start - End Date	Project ID:	Hole Type:	BH1
11/07/2018 - 12/07/2018	JN1143	CP	Sheet 3 of 3

Project Name:	151-157 Regents Park Road	Remarks:	Co-ordinates:	Level:	Logger:
					CW
Location:	Camden, London				
Client:	Uchaux Ltd				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
									Very stiff becoming hard dark grey silty CLAY
		21.00 - 21.45	U						
		21.40	D						
		22.00	D						
		22.50 - 22.95	D						
		22.50	SPT(S)	N=46 (5,5/10,10,12,14)					
		23.50	D						
		24.00 - 24.45	U						
		24.40	D						
		25.00	D			(15.00)			
		25.50 - 25.95	D						
		25.50	SPT(S)	N=48 (6,6/10,11,13,14)					
		26.50	D						
		27.00 - 27.45	U						
		27.50	D						
		28.00	D						
		28.50 - 28.95	D						
		28.50	SPT(S)	N=52 (7,7/10,12,14,16)					
		29.00	D						
		29.50 - 29.95	U						
		30.00	D					30.00	End of Borehole at 30.00m

21 22 23 24 25 26 27 28 29 30

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks
	150			11-07-2018	4.00	1.50	4.40	3.85	20	4.00 8.50	4.40 8.70	00:30 00:30	

APPENDIX C

Geotechnical Test Results

Callum Ward
ST Consult Ltd
Twigden Barns
Brixworth Road
Creaton
Northamptonshire
NN6 8NN

t: 01604 500020
f: 01604 500021
e: cward@stconsult.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 18-92752

Project / Site name:	151-157 Regents Park Road	**Samples received on:**	16/07/2018
Your job number:	JN1143	**Samples instructed on:**	16/07/2018
Your order number:		**Analysis completed by:**	20/07/2018
Report Issue Number:	1	**Report issued on:**	23/07/2018
Samples Analysed:	3 soil samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 18-92752

Project / Site name: 151-157 Regents Park Road

Lab Sample Number				1001866	1001867	1001868		
Sample Reference				BH1	BH1	BH1		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				2.00	9.00	15.00		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	17	17	16		
Total mass of sample received	kg	0.001	NONE	0.34	0.40	0.42		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.5	8.5	8.9		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.98	0.95	0.55		

Analytical Report Number : 18-92752

Project / Site name: 151-157 Regents Park Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1001866	BH1	None Supplied	2.00	Brown clay.
1001867	BH1	None Supplied	9.00	Brown clay.
1001868	BH1	None Supplied	15.00	Brown clay.

Analytical Report Number : 18-92752

Project / Site name: 151-157 Regents Park Road

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH1		S	18-92752	1001866	a			
BH1		S	18-92752	1001867	a			
BH1		S	18-92752	1001868	a			

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

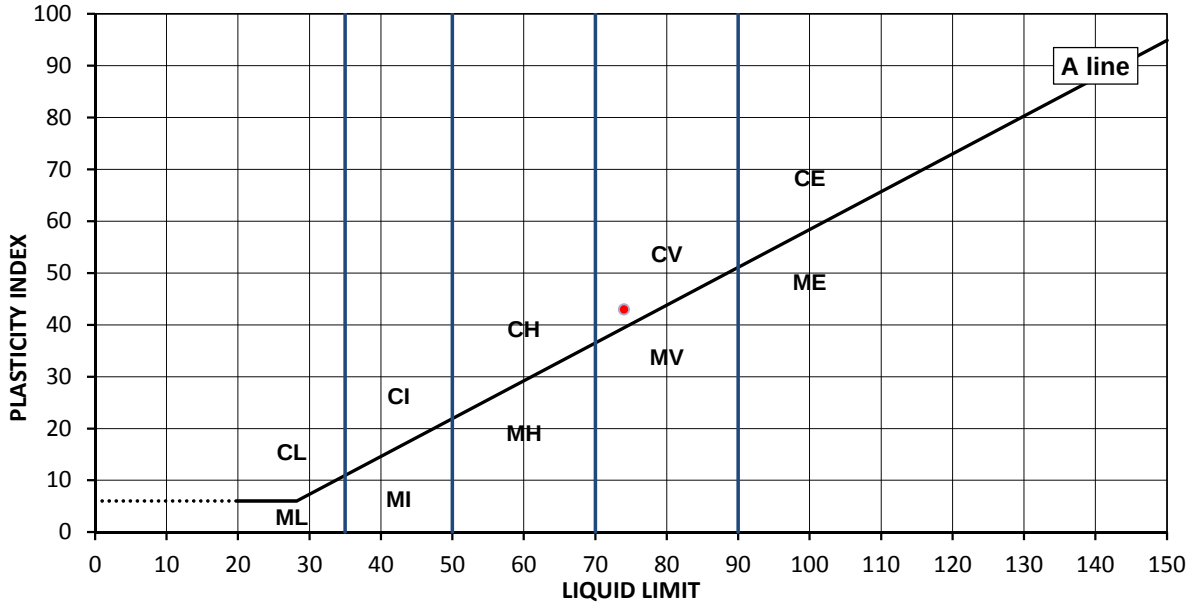
UKAS TESTING 4041

Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1001452	Depth Top [m]:	2.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30	74	31	43	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

UKAS TESTING 4041

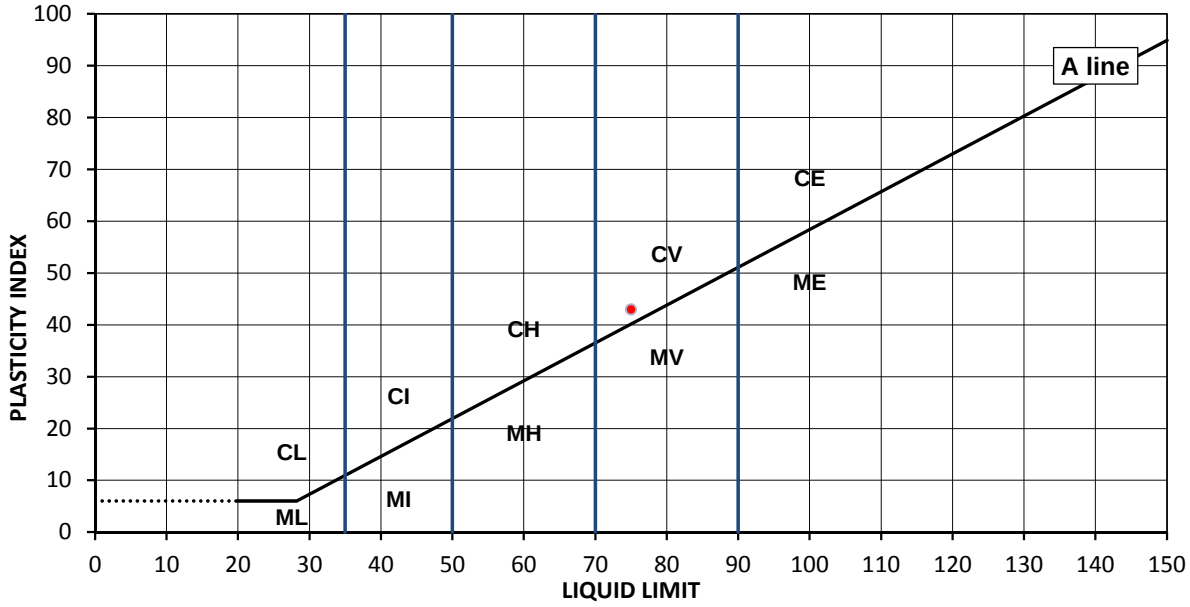
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1001454	Depth Top [m]:	9.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	75	32	43	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

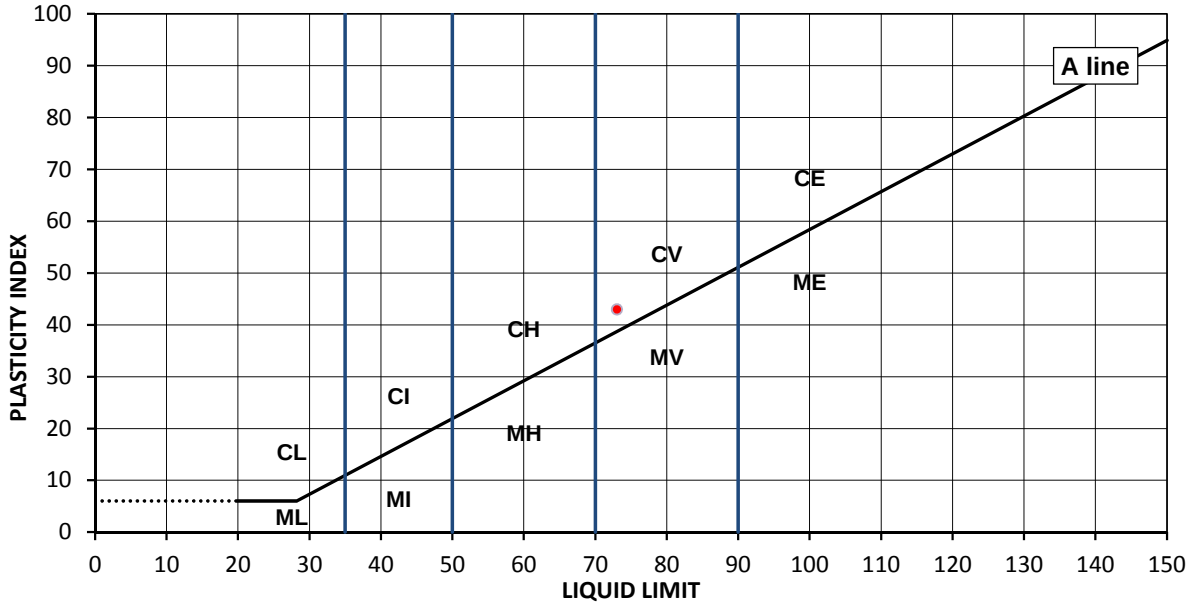
UKAS TESTING 4041

Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1001455	Depth Top [m]:	12.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	73	30	43	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Environmental Science

Client: ST Consult Ltd
Client Address: Twigden Barns
Brixworth Road
Creaton
Northamptonshire
NN6 8NN
Contact: Callum Ward
Site Name: 151 - 157 Regents Park Road
Site Address: Not Given

Client Reference: 18-92657
Job Number: 18-92657
Date Sampled: Not Given
Date Received: 16/07/2018
Date Tested: 26/07/2018
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C	Atterberg				Density		Total Porosity
		Reference	Top depth [m]	Base depth [m]	Type		%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3
1001452	BH1	Not Given	2.00	Not Given	U	Brown CLAY	30	100	74	31	43			
1001454	BH1	Not Given	9.00	Not Given	U	Brown CLAY	29	100	75	32	43			
1001455	BH1	Not Given	12.00	Not Given	U	Brown CLAY	29	100	73	30	43			

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression

Tested in Accordance with BS1377: Part 7: 1990, clause 8, single specimen

UKAS TESTING 4041

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

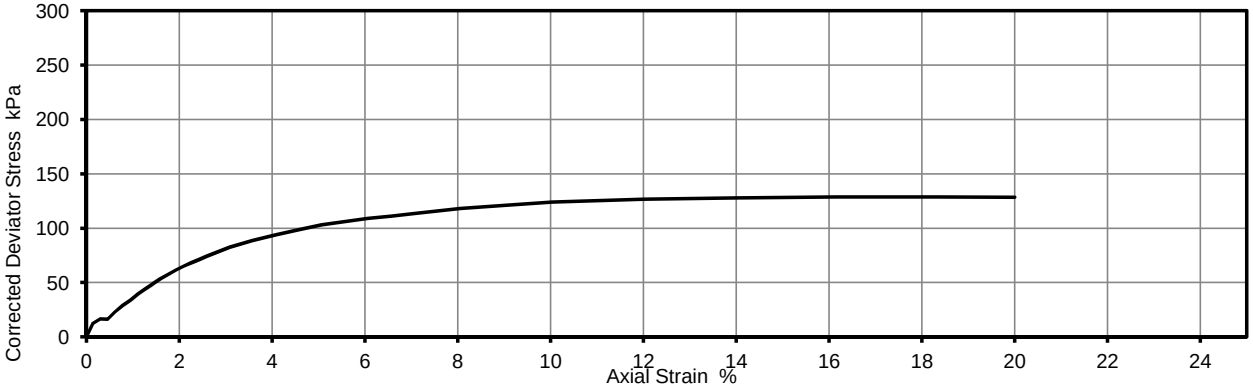
Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

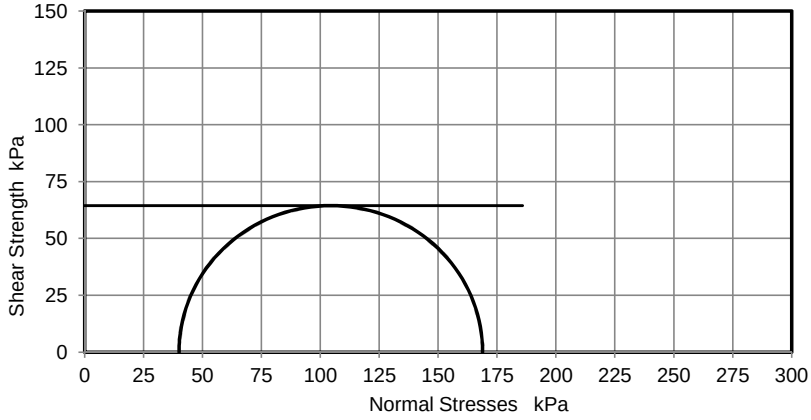
Laboratory Reference:	1001452
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY
Depth Top [m]:	2.00
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	1.98	%/min
Length	201.54	mm	Cell Pressure	40	kPa
Diameter	103.51	mm	Axial Strain at failure	18.1	%
Bulk Density	1.97	Mg/m3	Deviator Stress, (σ1 - σ3)f	129	kPa
Moisture Content	30	%	Undrained Shear Strength, cu	64	kPa ½(σ1 - σ3)f
Dry Density	1.52	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.79	kPa	Membrane thickness	0.23	mm

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

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Darren Berrill
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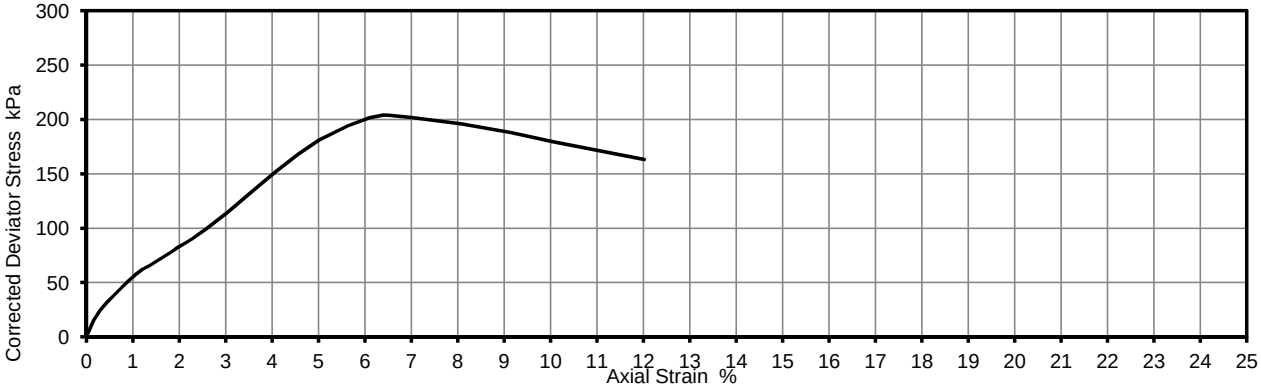
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

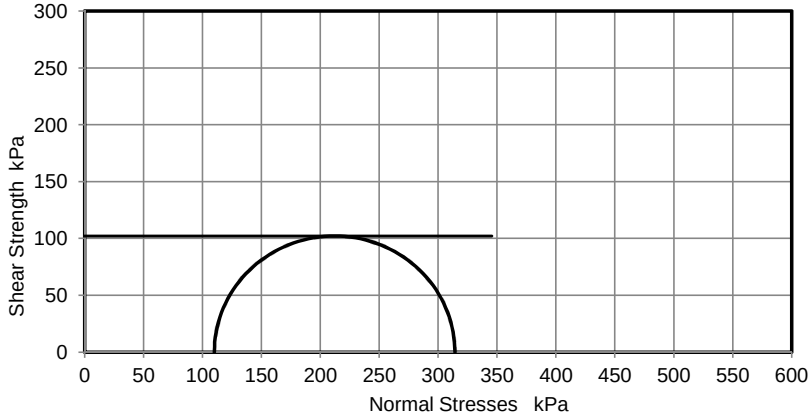
Laboratory Reference:	1001453
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY
Depth Top [m]:	5.50
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	1.83	%/min
Length	218.31	mm	Cell Pressure	110	kPa
Diameter	104.34	mm	Axial Strain at failure	6.4	%
Bulk Density	1.88	Mg/m3	Deviator Stress, (σ1 - σ3)f	204	kPa
Moisture Content	32	%	Undrained Shear Strength, cu	102	kPa ½(σ1 - σ3)f
Dry Density	1.43	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.41	kPa	Membrane thickness	0.26	mm

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

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PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
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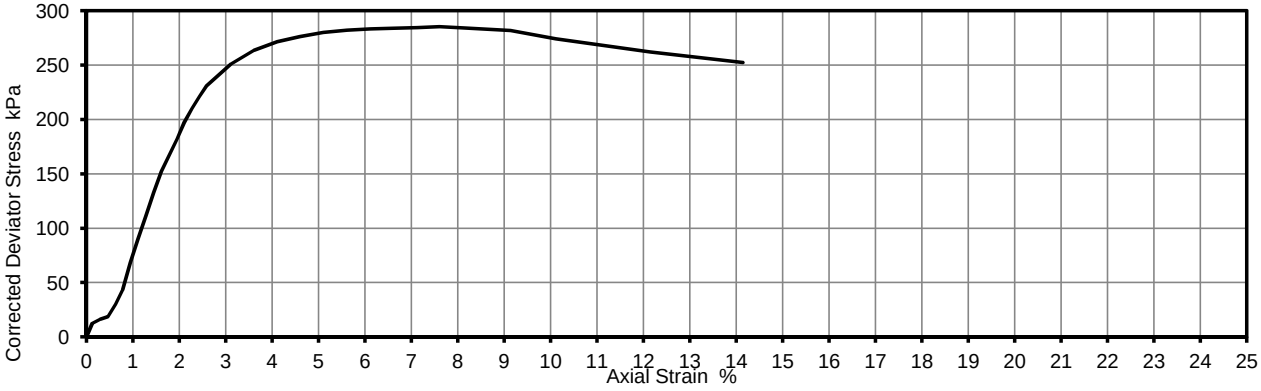
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

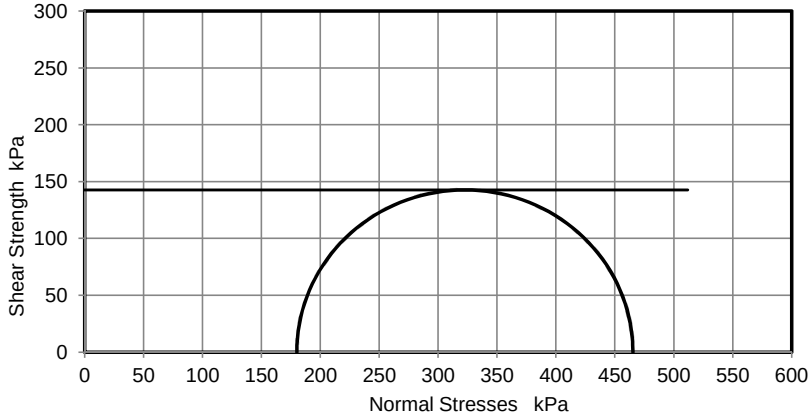
Laboratory Reference:	1001454
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY
Depth Top [m]:	9.00
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	2.00	%/min
Length	95.45	mm	Cell Pressure	180	kPa
Diameter	50.63	mm	Axial Strain at failure	7.6	%
Bulk Density	1.86	Mg/m3	Deviator Stress, (σ1 - σ3)f	285	kPa
Moisture Content	29	%	Undrained Shear Strength, cu	143	kPa ½(σ1 - σ3)f
Dry Density	1.44	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.62	kPa	Membrane thickness	0.17	mm

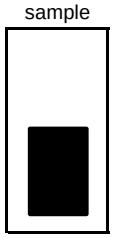
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

air void

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/07/2018

for and on behalf of i2 Analytical Ltd

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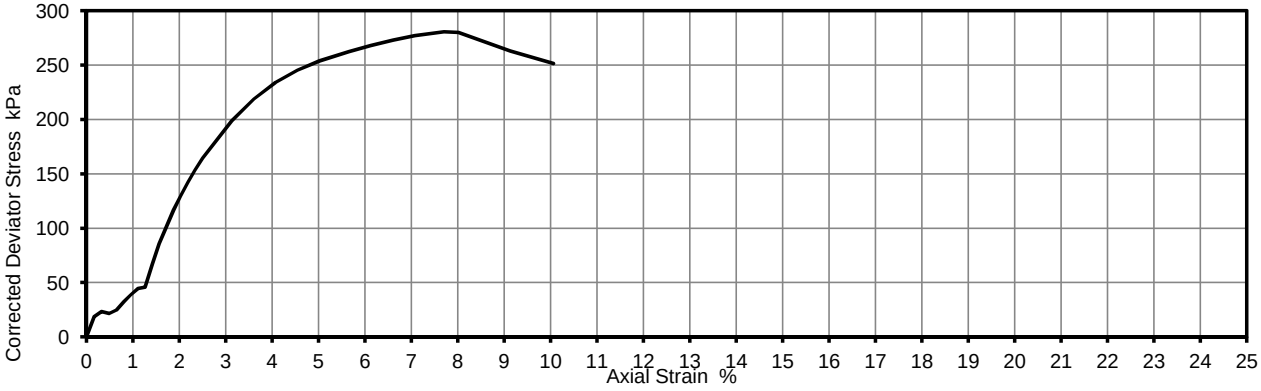
Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

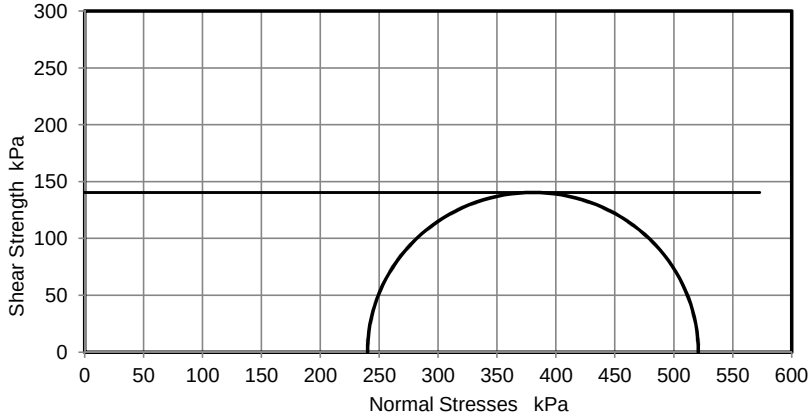
Laboratory Reference:	1001455
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY
Depth Top [m]:	12.00
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	1.89	%/min
Length	211.96	mm	Cell Pressure	240	kPa
Diameter	104.10	mm	Axial Strain at failure	7.7	%
Bulk Density	1.97	Mg/m3	Deviator Stress, (σ1 - σ3)f	281	kPa
Moisture Content	29	%	Undrained Shear Strength, cu	140	kPa ½(σ1 - σ3)f
Dry Density	1.53	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.45	kPa	Membrane thickness	0.25	mm

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/07/2018

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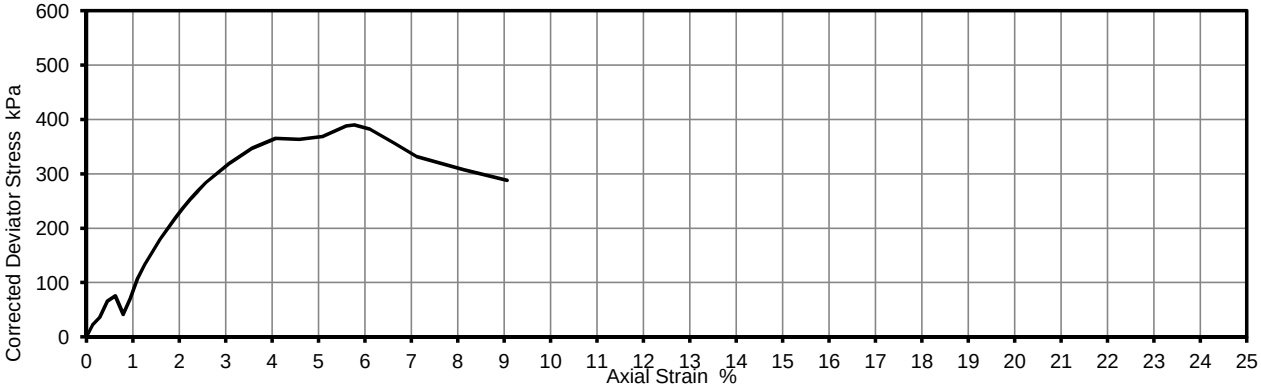
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

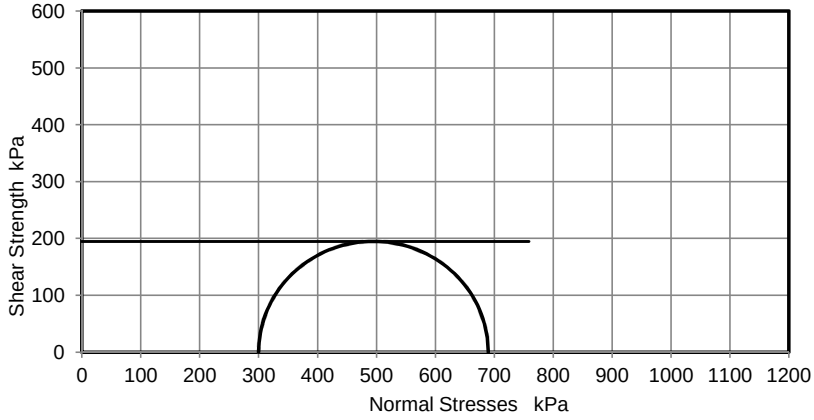
Laboratory Reference:	1001456	Depth Top [m]:	15.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	199.32	mm	Cell Pressure	300	kPa	
Diameter	103.94	mm	Axial Strain at failure	5.8	%	
Bulk Density	1.99	Mg/m3	Deviator Stress, (σ1 - σ3)f	390	kPa	
Moisture Content	25	%	Undrained Shear Strength, cu	195	kPa	½(σ1 - σ3)f
Dry Density	1.60	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.37	kPa	Membrane thickness	0.25	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/07/2018

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TEST CERTIFICATE

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Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

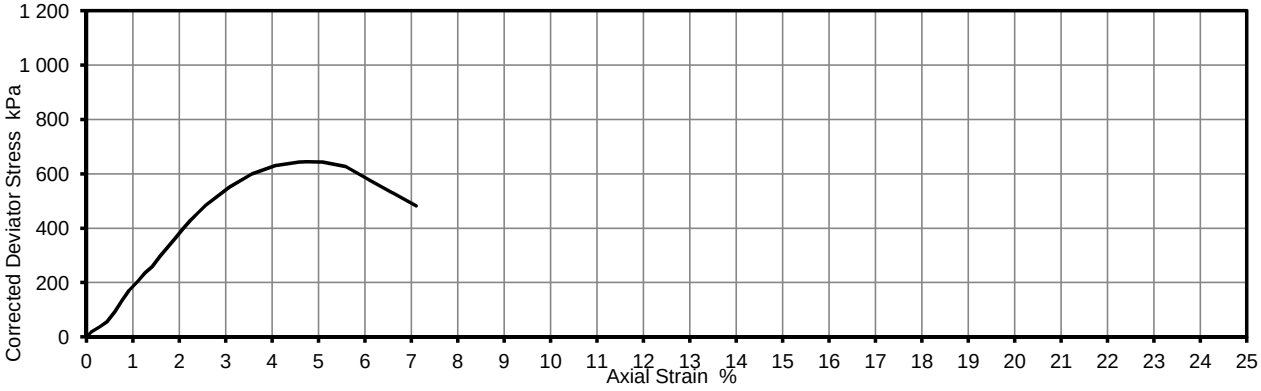
Test Result

Laboratory Reference:	1001457
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY

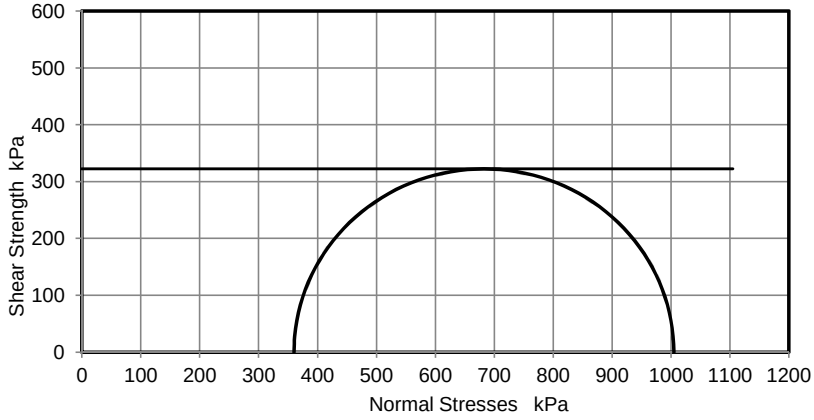
Depth Top [m]:	18.00
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	2.00	%/min
Length	98.26	mm	Cell Pressure	360	kPa
Diameter	50.13	mm	Axial Strain at failure	4.7	%
Bulk Density	1.96	Mg/m3	Deviator Stress, (σ1 - σ3)f	645	kPa
Moisture Content	26	%	Undrained Shear Strength, cu	322	kPa ½(σ1 - σ3)f
Dry Density	1.56	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.49	kPa	Membrane thickness	0.19	mm

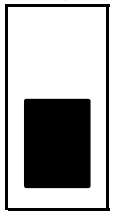
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

air void

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/07/2018

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

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Tested in Accordance with BS1377: Part 7: 1990, clause 8, single specimen

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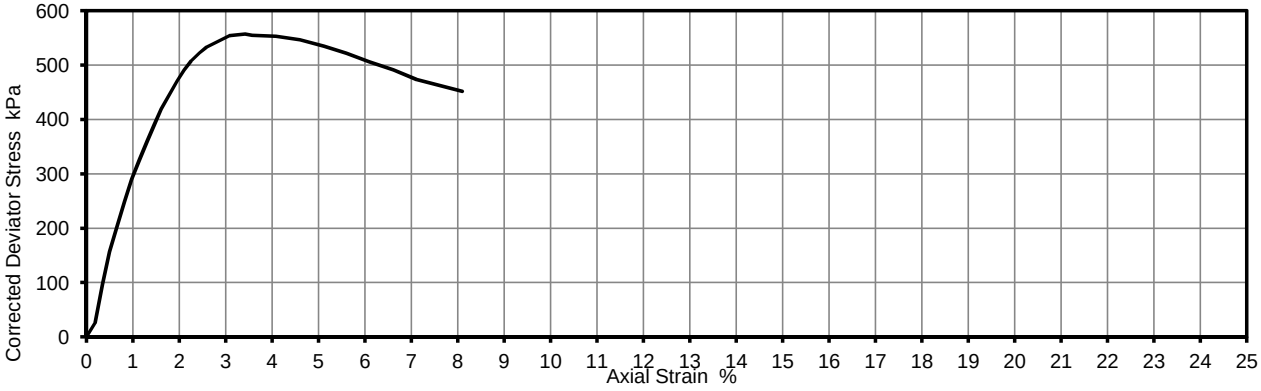
Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

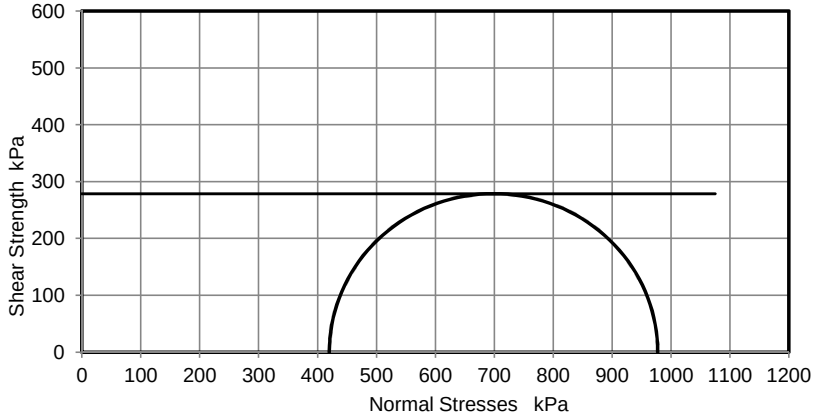
Laboratory Reference:	1001458
Hole No.:	BH1
Sample Reference:	Not Given
Sample Description:	Brown CLAY
Depth Top [m]:	21.00
Depth Base [m]:	Not Given
Sample Type:	U

Test Number	1		Rate of Strain	2.00	%/min
Length	98.55	mm	Cell Pressure	420	kPa
Diameter	50.19	mm	Axial Strain at failure	3.4	%
Bulk Density	1.95	Mg/m3	Deviator Stress, (σ1 - σ3)f	558	kPa
Moisture Content	28	%	Undrained Shear Strength, cu	279	kPa ½(σ1 - σ3)f
Dry Density	1.52	Mg/m3	Mode of Failure	Brittle	
Membrane Correction	0.41	kPa	Membrane thickness	0.22	mm

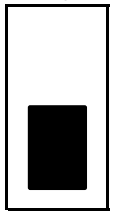
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

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UKAS TESTING 4041

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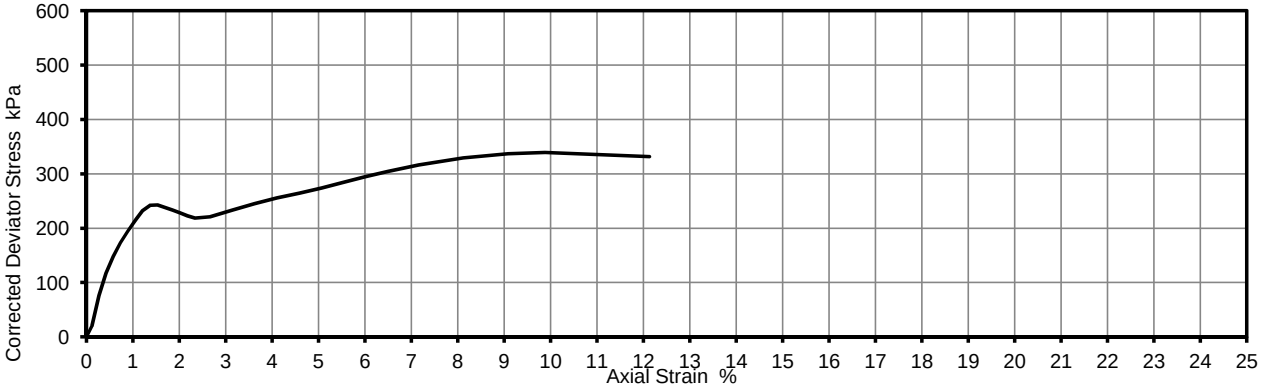
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

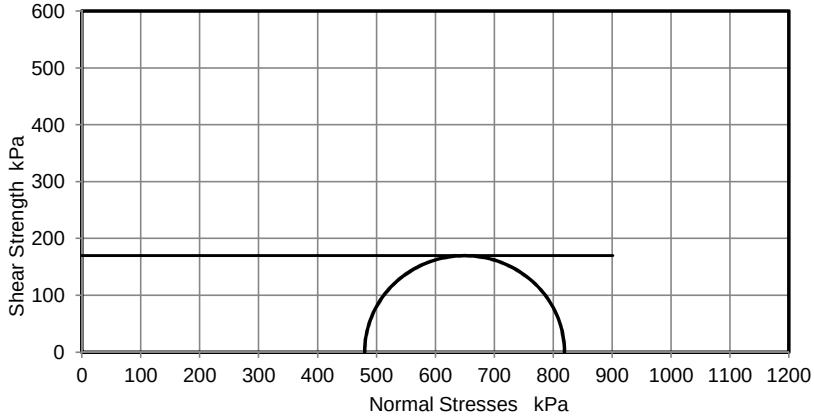
Laboratory Reference:	1001459	Depth Top [m]:	24.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	1.93	%/min	
Length	207.65	mm	Cell Pressure	480	kPa	
Diameter	103.86	mm	Axial Strain at failure	9.9	%	
Bulk Density	1.95	Mg/m3	Deviator Stress, (σ1 - σ3)f	339	kPa	
Moisture Content	27	%	Undrained Shear Strength, cu	170	kPa	½(σ1 - σ3)f
Dry Density	1.54	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.60	kPa	Membrane thickness	0.28	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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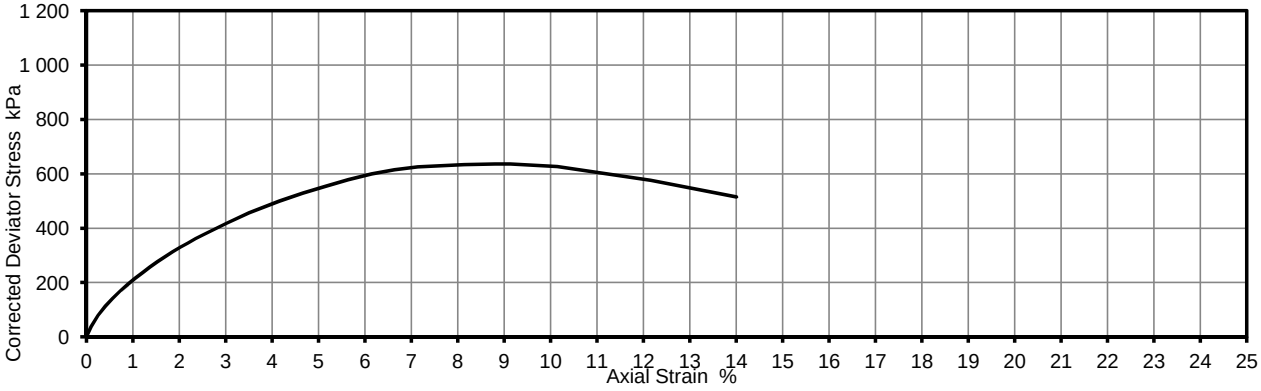
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

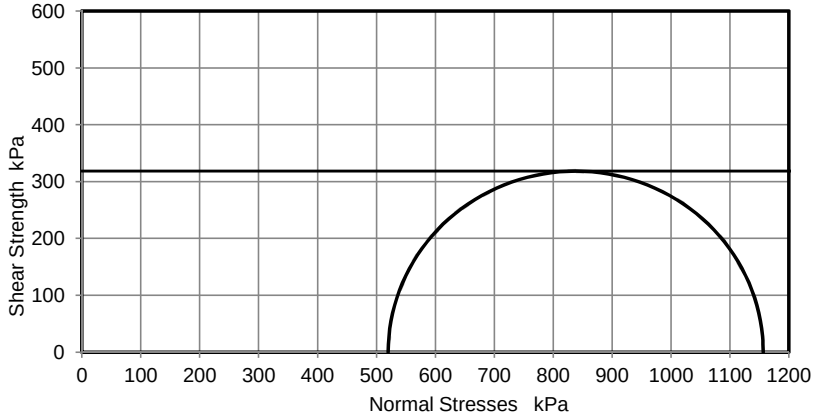
Laboratory Reference:	1001460	Depth Top [m]:	27.00
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	199.67	mm	Cell Pressure	520	kPa	
Diameter	103.91	mm	Axial Strain at failure	8.8	%	
Bulk Density	1.98	Mg/m3	Deviator Stress, (σ1 - σ3)f	637	kPa	
Moisture Content	24	%	Undrained Shear Strength, cu	318	kPa	½(σ1 - σ3)f
Dry Density	1.60	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.63	kPa	Membrane thickness	0.32	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/07/2018

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of Unconsolidated Undrained Triaxial Compression

Tested in Accordance with BS1377: Part 7: 1990, clause 8, single specimen

UKAS TESTING 4041

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

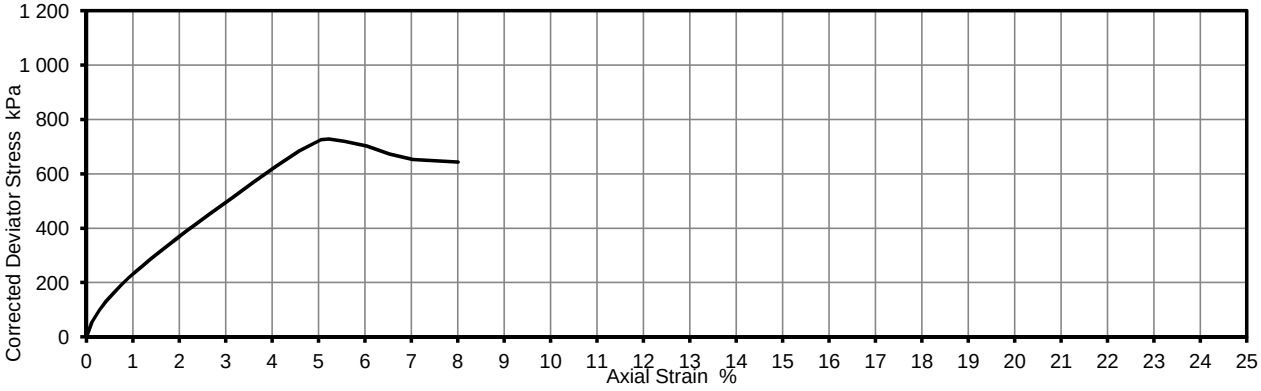
Client:	ST Consult Ltd	Client Reference:	18-92657
Client Address:	Twigden Barns Brixworth Road Creaton Northamptonshire NN6 8NN	Job Number:	18-92657
		Date Sampled:	Not Given
		Date Received:	16/07/2018
Contact:	Callum Ward	Date Tested:	26/07/2018
Site Name:	151 - 157 Regents Park Road	Sampled By:	Not Given
Site Address:	Not Given		

Test Result

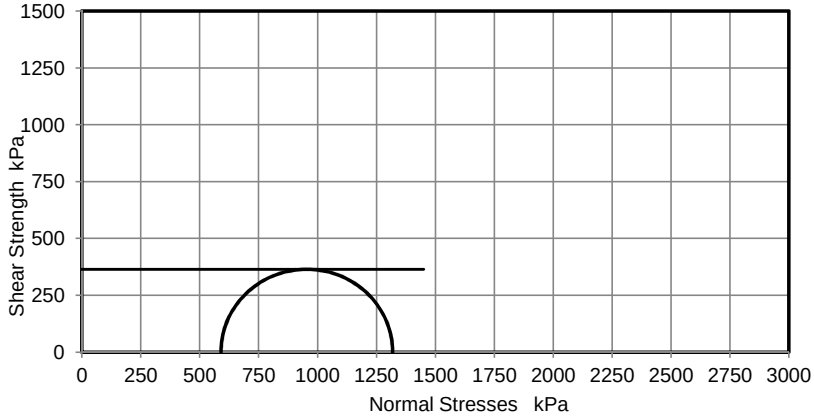
Laboratory Reference:	1001461	Depth Top [m]:	29.50
Hole No.:	BH1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	1.95	%/min	
Length	204.90	mm	Cell Pressure	590	kPa	
Diameter	105.10	mm	Axial Strain at failure	5.2	%	
Bulk Density	2.00	Mg/m3	Deviator Stress, (σ1 - σ3)f	729	kPa	
Moisture Content	23	%	Undrained Shear Strength, cu	364	kPa	½(σ1 - σ3)f
Dry Density	1.62	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.39	kPa	Membrane thickness	0.28	mm	

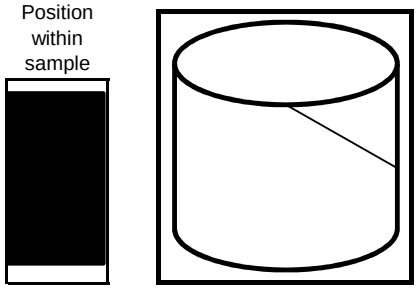
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Notes:

Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Unable to take a photo

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd